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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,406	03/28/2005	Satoshi Okada	0717-0525PUS1	8973

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EXAMINER

AMIN, JWALANT B

ART UNIT	PAPER NUMBER
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2628

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/505,406

Applicant(s)

OKADA, SATOSHI

Examiner

Jwalant Amin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/24/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figures 12-14 should be designated by a legend such as --Prior Art- because only that which is old is illustrated. See MPEP j 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: there is not proper spacing between words throughout the disclosure making it difficult to read, for instance: the term "colorelement" on page 2 line 10 does not have proper spacing between the words "color" and "element"; the term "5ehas" on page 42 line 13 does not have proper spacing between the words "5e" and "has" There are numerous such examples throughout the disclosure.

Appropriate correction is required.

3. The disclosure is objected to because of the following informalities: the term ""5", "2" and "1"" on page 9 line 17 is mistyped. The term should be ""4", "2" and "1"" (see Fig. 10, correction pattern 2).

Appropriate correction is required.

4. The disclosure is objected to because of the following informalities: the element represented by the term "display device 10" occurring on page 11 line 5, page 12 line 3 and page 54 line 10 is not specified in any of the figures. The term should be "display device 3".

Appropriate correction is required.

Claim Objections

5. Claim 3 is objected to because of the following informalities: the term "basic pattern" on page 63 lines 8-9 is an inconsistent terminology. Elsewhere in the disclosure, the term "basic portion" has been used. For prior art rejection, the examiner interprets the term as "basic portion". Appropriate correction is required.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to

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be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1 and 6-8 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 7,006,096 in view of Uehara et al. (US 4,748,443; hereinafter referred to as Uehara).

8. Specifically, it is well established that "Omission of element and its function in combination is obvious expedient if remaining elements perform same functions as before" In re KARLSON (CCPA) 136 USPQ 184 (1963). The above claims in the current application, that is to say all of them, are **broader** in all respects than the reference.

9. To perform analysis required, claim 1 of the current application is compared to claim 1 of Patent No. 7,006,096.

Claim 1: Current Application	Claim 1: Patent No. 7,006,096
<p>A character display apparatus</p> <p>a display device comprising a plurality of pixels</p> <p>a control section for controlling the display device</p> <p>wherein each of the plurality of pixels</p>	<p>A character display apparatus</p> <p>a display device having a plurality of pixels</p> <p>a control section for controlling the display device</p> <p>wherein each of the plurality of pixels</p>

<p>comprises a plurality of sub-pixels arranged in predetermined direction, and at least one of a plurality of color elements is assigned to each of the plurality of sub-pixels</p>	<p>includes a plurality of sub-pixels arranged along a predetermined direction, one of a plurality of color elements being pre-assigned to each of the plurality of sub-pixels</p>
<p>the control section determines at least one sub-pixel, to which a basic portion of a character is assigned, among the plurality of sub-pixels in the display device, based on character shape data indicating character shapes</p>	<p>the control section acquires a first bit map which represents a basic portion of a character, dots which form the first bit map correspond to the plurality of sub-pixels in a one-to-one manner</p>
<p>a first pixel of the plurality of pixels comprises a plurality of first sub-pixels; at least one pixel neighboring the first pixel comprises a plurality of second sub-pixels</p>	<p>each of the plurality of pixels includes a plurality of sub-pixels (Note: a display device has a plurality of pixels; any one of those pixels will have at least one a neighboring pixel)</p>
<p>the control section determines an arrangement pattern containing a plurality of elements,</p>	<p>the control section acquires a first bit map, dots which form the first bit map (Note: a bit map is an representation of a</p>

<p>wherein a value of each of the plurality of elements is determined depending on whether or not the basic portion is assigned to a corresponding sub-pixel of the plurality of the first sub-pixels and the plurality of the second sub-pixels</p> <p>the control section introduces a predetermined change into the arrangement pattern, the predetermined change including replacement of a position of the basic portion or duplication of the basic portion, and determines a luminance level of the first pixel based on the changed arrangement pattern</p>	<p>plurality of dots arranged in rows and columns)</p> <p>sets the intensity of a color element of at least one specific sub-pixel corresponding to the basic portion of the [italic character] to a predetermined value</p> <p>the control section performs predetermined conversion of the first bit map so as to generate a second bit map which represents a basic portion of an [italic character], the second bit map is generated from the first bit map by shifting each dot forming the first bit map by a shift amount, and sets the intensity of at least one sub-pixel adjacent to the at least one specific sub-pixel corresponding to the basic portion of the [italic character] to a value different from the predetermined</p>
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	value based on the second bit map so as to display the [italic character] on the display device
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As per Karlson, the above-cited claim is identical except for the omission of the elements above. It would have been obvious to one of ordinary skill in the art at the time of present invention to remove the limitations of "italic character" above without changing the scope of claim 1 because the added limitation as recited in Patent No. 7,006,096 is an additional feature to claim 1 and thus, is not necessary to determine the value of the plurality of elements of the arrangement pattern.

Although claim 1 of Patent No. 7,006,096 teaches the limitations of claim 1 of the current application, it does not explicitly disclose that the basic portion indicates a skeleton of a character. However, Uehara teaches a format of character skeleton pattern data that can be easily generated by merely preparing one dot matrix pattern for each character (Fig. 7, col. 5 lines 17-18 and lines 45-50, col. 7 lines 63-68). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to use skeleton pattern data as taught by Uehara into the apparatus of claim 1 of Patent No. 7,006,096 to represent the basic portion because by enlarging the skeleton pattern data, a painted character pattern of any size can be generated with high quality (col. 7 lines 66-68).

Therefore, this claim is properly subject to ODP rejection.

10. To perform analysis required, claim 6 of the current application is compared to claim 4 of Patent No. 7,006,096.

Claim 6: Current Application	Claim 4: Patent No. 7,006,096
A method for displaying a character on a character display apparatus	A character display method for displaying a character on a display device

Please refer to the ODP rejection of claim 1 for further arguments.

11. To perform analysis required, claim 7 of the current application is compared to claim 5 of Patent No. 7,006,096.

Claim 7: Current Application	Claim 5: Patent No. 7,006,096
A program for causing a character display apparatus to execute a character display process	[the recording medium] storing a program which allows the control section to execute a process

As per Karlson, the above-cited claim is identical except for the omission of the elements above. It would have been obvious to one of ordinary skill in the art at the time of present invention to remove the limitations of "the recording medium" above without changing the scope of claim 1 because the added limitation as recited in Patent No. 7,006,096 is an additional feature to claim 1 and thus, is not necessary to execute the character display process.

Please refer to the ODP rejection of claim 1 for further arguments.

12. To perform analysis required, claim 8 of the current application is compared to claim 5 of Patent No. 7,006,096.

Claim 8: Current Application	Claim 5: Patent No. 7,006,096
A recording medium storing a program for causing a character display apparatus to execute a character display process, wherein the recording medium is readable by the character display apparatus	A recording medium which can be read by an information display apparatus, the recording medium storing a program which allows the control section to execute a process

Please refer to the ODP rejection of claim 1 for further arguments.

13.

Claim Rejections - 35 USC § 101

14. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

15. Claim 7 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

16. Regarding claim 7, a program for causing display apparatus to execute a character display process per se, not stored on a computer-readable medium is non-statutory subject matter. For prior art rejection, the examiner interprets that the program is stored on a computer-readable medium.

Claim Rejections - 35 USC § 102

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

18. Claims 1, 3 and 6-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Koyama (US 7,006,096 B2)

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

19. Regarding claims 1 and 6-8, Koyama teaches a character display apparatus, a program for causing a character display apparatus to execute a character display process, and a recording medium storing a program, comprising a display device comprising a plurality of pixels; a control section for controlling the display device, wherein each of the plurality of pixels comprises a plurality of sub-pixels arranged in predetermined direction, and at least one of a plurality of color elements is assigned to each of the plurality of sub-pixels; the control section determines at least one sub-pixel,

to which a basic portion indicating a skeleton of a character (Fig. 25 shows generating basic portion data from skeleton data) is assigned, among the plurality of sub-pixels in the display device, based on character shape data indicating character shapes (Fig. 24 shows skeleton data representing the skeleton shape of a Chinese character); a first pixel of the plurality of pixels comprises a plurality of first sub-pixels (the pixel from the plurality of pixels being currently processed corresponds to the first pixel); at least one pixel neighboring the first pixel comprises a plurality of second sub-pixels (a neighboring pixel to the pixel being currently processed); the control section determines an arrangement pattern (bit map) containing a plurality of elements (dots), wherein a value of each of the plurality of elements (dots are represented by bits in a bitmap; dots correspond to plurality of sub-pixels in one to one manner) is determined depending on whether or not the basic portion is assigned to a corresponding sub-pixel of the plurality of the first sub-pixels and the plurality of the second sub-pixels (a bit having a value of "1" corresponds basic portion is assigned to the sub-pixel, and a bit having a value of "0" corresponds to basic portion is not assigned to the sub-pixel); the control section introduces a predetermined change (predetermined conversion) into the arrangement pattern, the predetermined change including replacement of a position of the basic portion or duplication of the basic portion (shifting each dot forming the first bitmap to generate the second bit map), and determines a luminance level (intensity) of the first pixel based on the changed arrangement pattern (Figs. 24-25, col. 1 lines 22-30, col. 3 lines 8-25 and lines 38-43, col. 4 lines 2-10 and lines 47-51, col. 5 lines 47-48 and lines 60-64, col. 14 lines 10-24, lines 38-45 and lines 50-55).

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20. Regarding claim 3, Koyama teaches the plurality of elements include a first element (current bit/D(x,y)) and a second element neighboring the first element (eight neighborhood dots) (Fig. 18; col. 5 lines 47-48); a value of the first element indicates that the basic portion is assigned to a sub-pixel ($C(3x+2,y)$) relating to the first element (Figs. 15A-B, col. 14 lines 50-53, col. 15 lines 6-18); a value of the second element ($N(-1,0)$) indicates that the basic portion is not assigned to a sub-pixel relating to the second element (when the bit has a value of "0", none of it's three sub-pixels is defined as a sub-pixel for the basic portion) (Figs. 15A-B, col. 14 lines 42-45 and lines 53-55); and the control section determines the luminance level (intensity of the color element) of the first pixel based on another arrangement pattern (second bit map) which is modified (predetermined conversion) from said arrangement pattern (first bit map) such that a value of the second element is changed to indicate that the basic pattern is assigned to the sub-pixel relating to the second element (the second bit map is generated from the first bit map by shifting each dot; when the first bit map is shifted the value of current dot is also shifted to the next dot indicating that the next dot forms new bit map) (col. 3 lines 13-25 and lines 38-48).

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama as applied to claim 1 above, and further in view of Desai (US 6,282,328 B1).

23. Regarding claim 2, Koyama teaches the plurality of elements include a first element (current bit/D(x,y)) and a second element neighboring the first element (eight neighborhood dots) (Fig. 18; col. 5 lines 47-48); a value of the first element indicates that the basic portion is assigned to a sub-pixel (C(3x+2,y)) relating to the first element (Figs. 15A-B, col. 14 lines 50-53, col. 15 lines 6-18); a value of the second element (N(-1,0)) indicates that the basic portion is not assigned to a sub-pixel relating to the second element (when the bit has a value of "0", none of it's three sub-pixels is defined as a sub-pixel for the basic portion) (Figs. 15A-B, col. 14 lines 42-45 and lines 53-55).

Koyama discloses the claimed limitations as stated above, except that Koyama does not explicitly teach the control section determines the luminance level of the first pixel is determined based on another arrangement pattern which is modified from said arrangement pattern such that a value of the first element is interchanged with a value of the second element. However, Desai teaches a method of providing morphological transformation of an image by rearranging pixels of the image, employed to effect a dilation transformation by identifying the maximum pixel intensity in each column (col. 1 lines 28-38, col. 2 lines 21-25 and lines 34-46; method of providing morphological transformation corresponds to control section; image corresponds to arrangement pattern; rearranged corresponds to modified; intermediate image corresponds another arrangement pattern; pixels from selected "neighborhoods", or regions, of the source image are rearranged corresponds to another arrangement pattern which is modified

from said arrangement pattern; pixel intensity value corresponds to luminance level; in order to identify the maximum pixel intensity in each column, the pixel intensity of all the elements in the column needs to be determined, which corresponds to determining the luminance level of the first pixel; replacing each pixel (point) in the image with its brightest neighbor corresponds to a value of the first element is interchanged with a value of the second element). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to replace each pixel in the image with its brightest neighbor as taught by Desai and use it into the apparatus of Koyama to determine the pixel intensity value because such system pertains to the morphological transformation of images via dilation, suitable for use with non-uniform offsets (col. 1 lines 15-18), and operates accurately and rapidly, without requiring unduly expensive processing equipment or without undue consumption of resources (col. 2 lines 1-4).

24. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koyama, and further in view of Hill et al. (US 6,243,070 B1; hereinafter referred to as Hill).

25. Regarding claim 4, Koyama discloses all of the claimed limitations as stated above, except that Koyama does not explicitly teach the control section determines the luminance level of the first pixel based on a combination of a color of the character and a background color of the character and the arrangement pattern. However, Hill teaches scan conversion method that generates a bitmap image where "on" means the intensity value associated with the pixel sub-component produces the specified foreground color,

and "off" means the intensity value associated with the pixel sub-component produces the specified background color (col. 15 lines 62-67, col. 16 lines 1-37; scan conversion method corresponds to control section; bitmap image/bitmap corresponds to arrangement pattern; "on"/"off" corresponds to values associated with the bits of the bitmap image; intensity value corresponds to luminance level; specified foreground color corresponds to color or the character; specified background color corresponds to background color of the character). Therefore, it would have been obvious to one of ordinary skill in the art at the time the of present invention to use scan conversion to determine the luminous intensity values based on the foreground and background colors as taught by Hill into the apparatus of Koyama because it allows different portions of a scaled image to be mapped into different pixel sub-component providing for a higher degree of resolution (col. 16 lines 1-3).

26. Regarding claim 5, Koyama discloses all of the claimed limitations as stated above, except that Koyama does not explicitly teach the control section compares a combination of a color of the character and a background color of the character with a combination of a predetermined character color and a predetermined background color, and determines the luminance level of the first pixel based on a result of the comparison and the arrangement pattern. However, Hill teaches scan conversion method where the luminous intensity of both a foreground and background colored pixel is determined, and portions of the image are compared to the desired foreground and background colors (col. 19 lines 29-37, col. 20 lines 7-9, col. 23 lines 58-67, col. 24 lines 1-13 and lines 31-36; image/bitmap image corresponds to arrangement pattern; foreground color

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corresponds to color of the character; background color corresponds to background color of the character; current pixel corresponds to first pixel; desired foreground color/foreground color pixel corresponds to predetermined character color; background color pixel corresponds to predetermined background color; luminance value/luminance intensity values corresponds to luminance level). Therefore, it would have been obvious to one of ordinary skill in the art at the time of present invention to use the scan conversion method to process and adjust the luminous intensity values as taught by Hill and use it into the apparatus of Koyama because this reduces or eliminates color distortions introduced into an image as the result of treating different color pixel sub-components as independent luminance sources (col. 24 lines 33-36).

References Cited:

27. The following references teach to determine and adjust the luminance level of a pixel.

- Tezuka et al. (US 2002/0008714 A1)
- Koyama et al. (US 6,542,161 B1)
- Hill et al. (US 6,188,385 B1)
- Koyama et al. (US 2003/0011603 A1)
- Lui et al. (US 6,339,426 B1)

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28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jwalant Amin whose telephone number is 571-272-2455. The examiner can normally be reached on 9:30 a.m. - 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on 571-272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*** J.A. 8/23/06



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